Reading a micrometer

H.S. Industrial Technology Department

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Learning Target: students will learn to measure to 1/1000 of an inch.

Learning practice

- See attached practice site at the end of the slides.
- https://www.proprofs.com/quiz-school/story.php?title=micrometer-quiz

Why

- The manufacture of machines require close tolerances.
- Interchangeability of parts require precision parts

How small is Precise?

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- Most tools will measure to 1/1000 of an inch.

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- Most tools will measure to 1/1000 of an inch.
- The normal human hair is about 2/1000 of an inch thick.

How small is Precise?

- Most tools will measure to 1/1000 of an inch.
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- Measurements are written as decimals.

How small is Precise?

- Most tools will measure to 1/1000 of an inch.
- The normal human hair is about 2/1000 of an inch.
- Measurements are written as decimals.
- 1/1000 = .001

Outside Micrometers

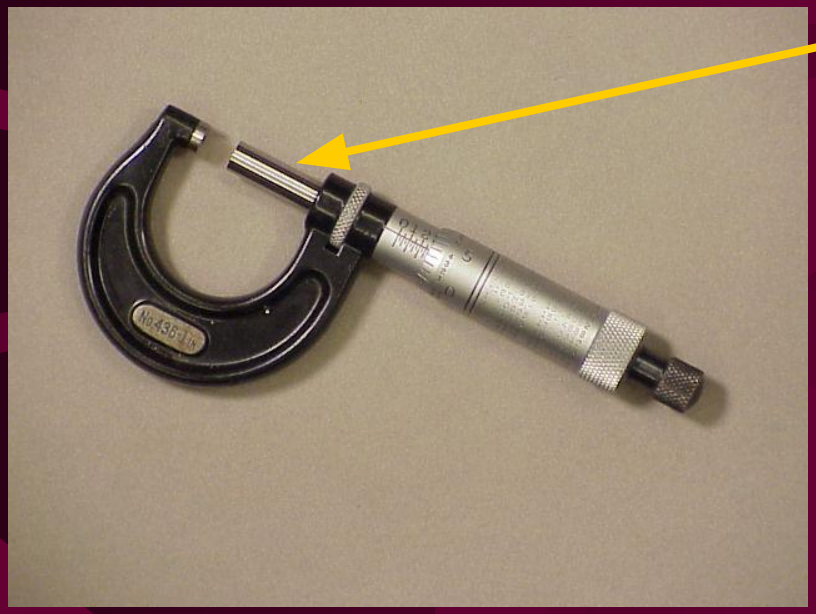
Outside Micrometer

- Accuracy to .001
- Range of one inch.

Parts of the micrometer.

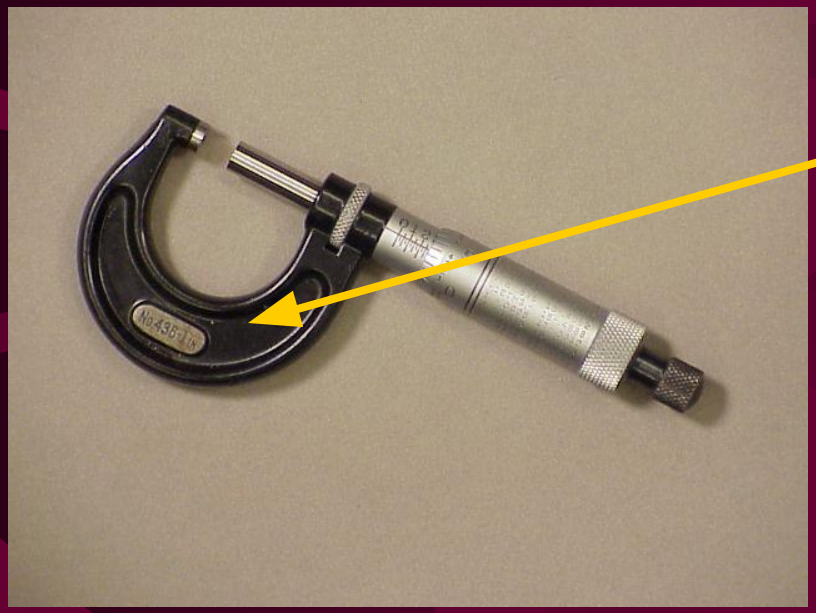
- Anvil

Parts of the micrometer.



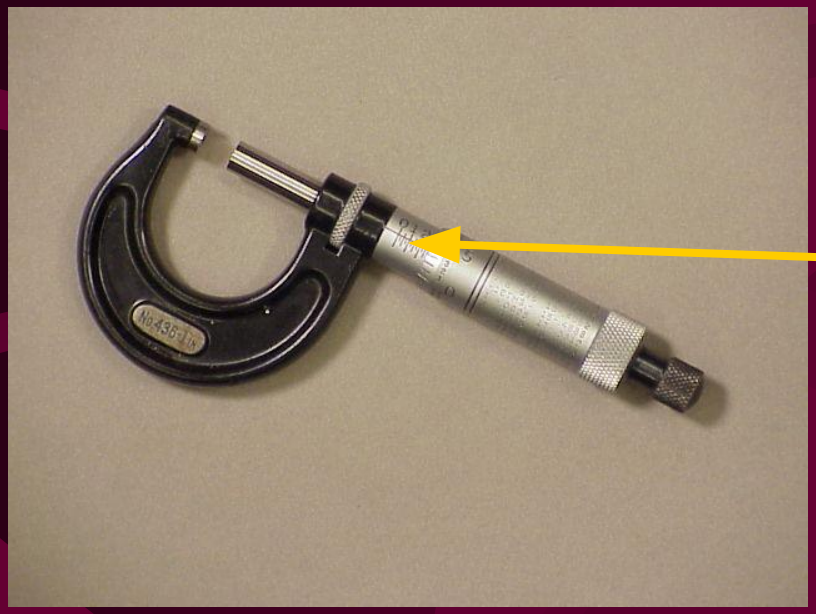
- Anvil
- Spindle

Parts of the micrometer.



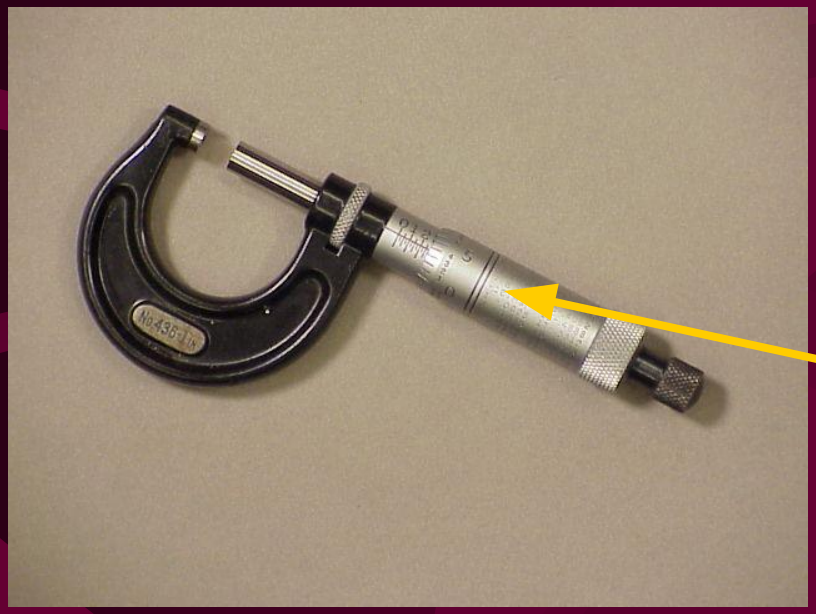
- Anvil
- Spindle
- Frame

Parts of the micrometer.



- Anvil
- Spindle
- Frame
- Barrel

Parts of the micrometer.

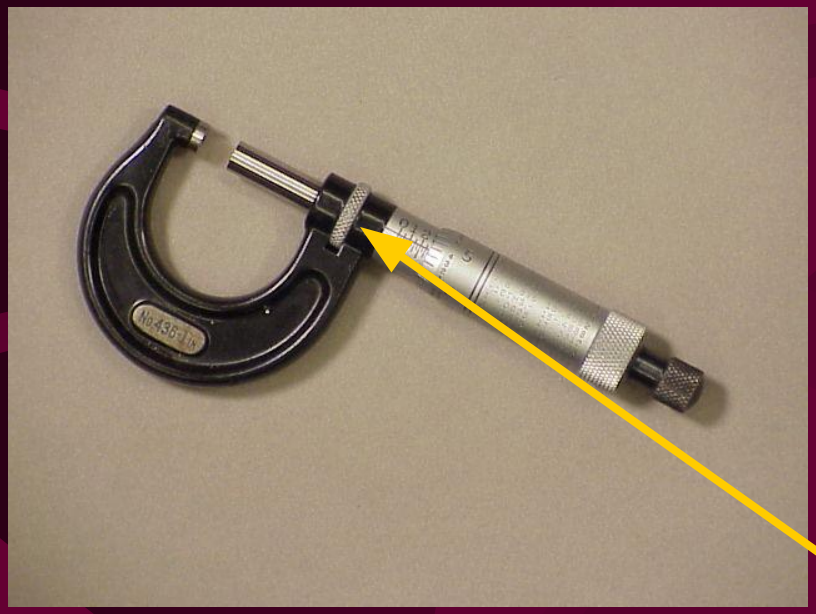


- Anvil
- Spindle
- Frame
- Barrel
- Thimble

Parts of the micrometer.

- Anvil
- Spindle
- Frame
- Barrel
- Thimble
- Ratchet

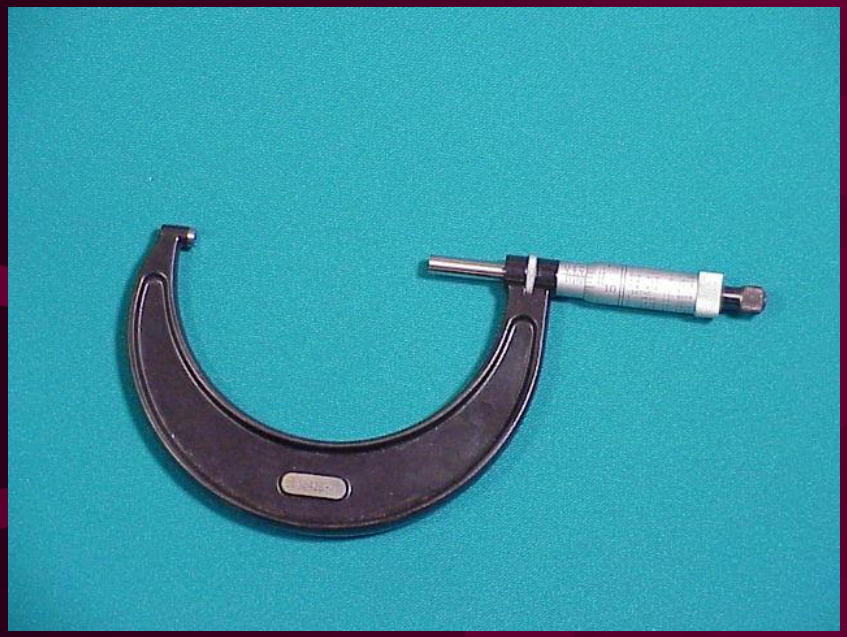
Parts of the micrometer.



- Anvil
- Spindle
- Frame
- Barrel
- Thimble
- Ratchet
- Lock

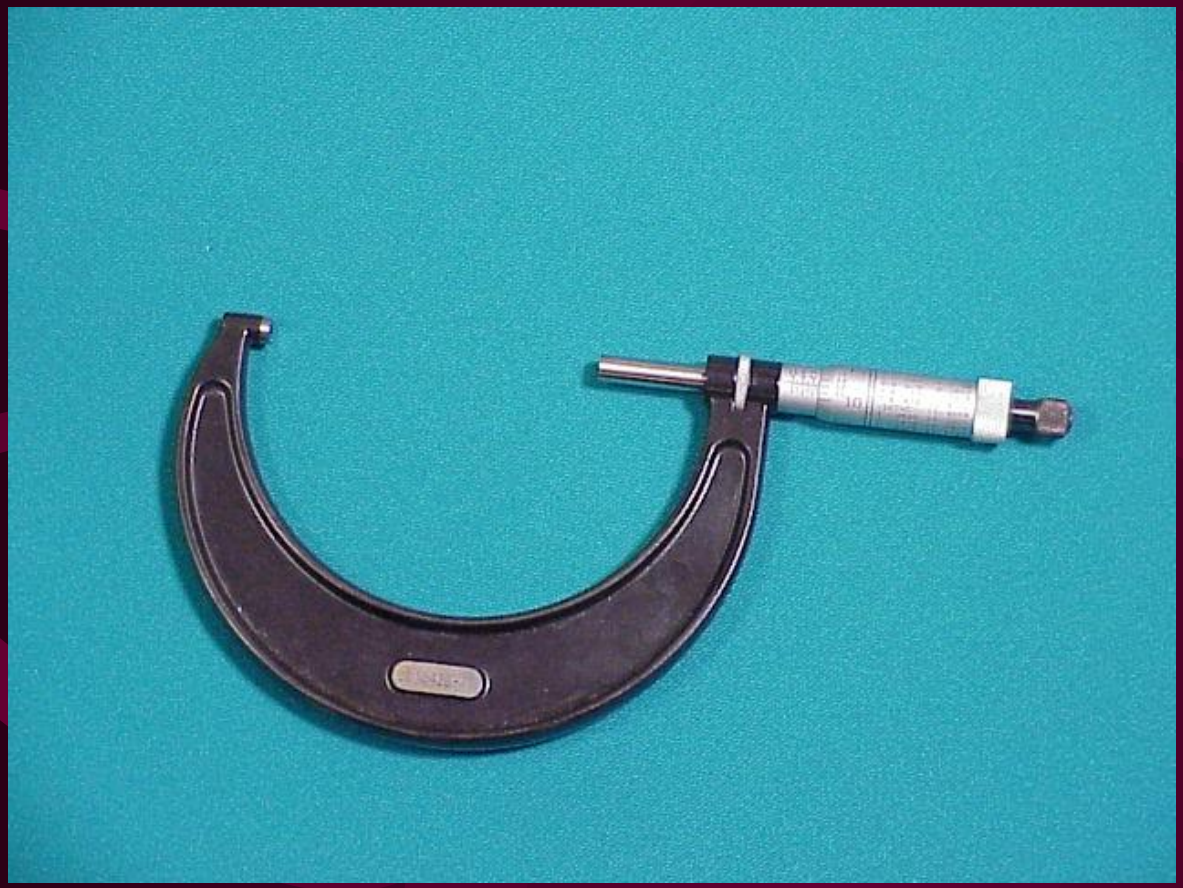
Reading the Outside Micrometer

Reading the Micrometer.



- Determine the range of the tool.
  - 0 - 1”
  - 1” - 2”
  - 2” - 3”
  - 3” - 4”

- Start by writing 3. This represents the smallest size this micrometer can measure.



3.

- Read the largest numbered line showing on the barrel.

3.

- Read the largest numbered line showing on the barrel.
- Write this down to the right of the decimal.

3.6

- Count the small lines between the long 6 line, and the edge of the thimble.

3.6

- Count the small lines between the long 6 line, and the edge of the thimble.
- In this case three small lines are showing.
- Each line = .025
- Three lines = .075

3.675

- Find the line closest to the base line on the barrel.
- Each line represents .001 of an inch.
- Add this reading to the size we currently have.

3.675

\+ .016

3.691

- The reading of this micrometer is
- 3.691
- Read as
  - Three inches, six hundred ninety one thousands.

3.675

\+ .016

3.691

Practice A

Read the micrometer.

Practice A

.261

Practice B

Read the micrometer.

Practice B

.399

For additional practice please visit the following online practice quiz

- https://www.proprofs.com/quiz-school/story.php?title=micrometer-quiz